

MONTGOMERY FIRE / RESCUE



Tools and Equipment



Montgomery Fire/Rescue

Tools and Equipment S. O. G.

The Montgomery Fire Department has adopted the “Essentials of Fire Fighting” as the standard for training and day-to-day operations within the fire department. This SOG is designed to be used in conjunction with the most current edition of the “Essentials of Fire Fighting”.

Although we have adopted the “Essentials” as a standard, differences in equipment and specialized tactical needs cause us to supplement the Essentials with our SOGs. Information and standards covered under the Montgomery Fire Department SOG will supersede any standard set forth in the current Essentials. Any information or standard operation not covered in the SOG will be referenced and conducted as dictated by the current edition of the Essentials.

The Montgomery Fire Department is equipped with a variety of common and uncommon tools and equipment. Therefore, it is vital that all personnel be educated and proficient in the use and maintenance of each item.

Be aware that specialty units such as Haz Mat and Heavy Rescue will carry additional equipment not assigned to the general fire line apparatus and will not be covered in this SOG.

CARE AND MAINTENANCE

All tools and equipment will be inspected and cleaned during Saturday equipment check and after each use. Equipment will also be accounted for and checked for maintenance needs during daily apparatus checks. In general it can be summed simply:

- 1) Wooden handled tools will to be re-finished when needed. Sanding and removing splinters as needed. Linseed oil finishes need to be used instead of paint.



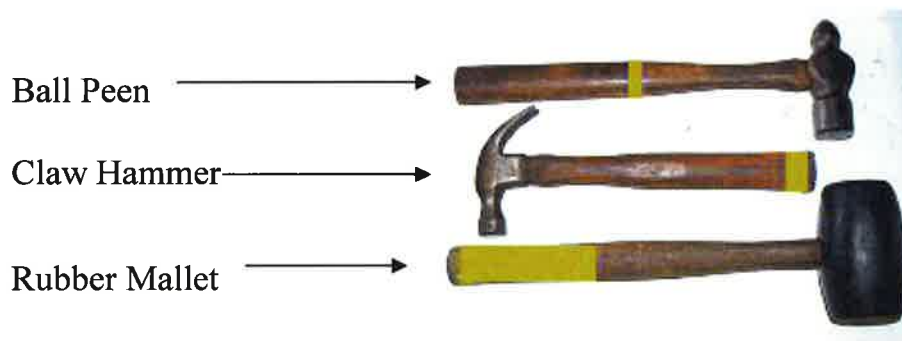
- 2) Cutting tools need to be checked for dullness and notching. Make sure not to over sharpen the blade edge. Check tightness of metal heads on wood handles.
- 3) All metal tools will be rust free. Steel wool or fine sandpaper can be used to remove rust. WD-40 is used as a rust inhibitor; wipe excess WD-40 off before storing tools.
- 4) Brass tools and appliances will to be cleaned and any valves will be Lubricated or cleaned for smooth operation and threads checked for damage.
- 5) Chainsaw blades should be sharpened or replaced by authorized Fire Department Maintenance personnel only.

All tools will to be accounted for and properly stored. They will be checked for visual signs of wear and deterioration. All equipment faults will be reported immediately and if deemed unsafe will be taken out of service.

Safety goggles and proper protection should always be worn when utilizing any tool in the Montgomery Fire Department.

ASSORTED HAMMERS

Different hammers are usually kept in the apparatus's tool box for different purposes; the rubber mallet on the bottom is used to disconnect couplings on hoses and apparatus.



TOOL BOX

All Trucks and Pumper Companies carry a tool box with a varied array of screw drivers, wrenches, hammers, pliers, etc. along with electrical tape, wire caps, lubricants and other items needed for service calls.



COTTON HOOK



Cotton hooks aid in the disassembly process during overhaul when dealing with mattresses, bails of hay or any tightly packed combustible material.

WATER KEY

This tool is used to turn off water supplies to buildings and residential homes at the meter. Electrical gloves should always be worn to limit the chance of water lines used as an electrical ground causing accidental electrocution of the user.





ELECTRICAL GLOVES AND RUBBER GAUNTLETS

Electrical gloves are rated at 20,000 volts. The rubber gloves are protected by a pair of leather gauntlet gloves. The electrical gloves should always be used when cutting any wire or cable from a pole or structure. It is also important, if possible, to neutralize any power source before attempting to use the gloves. The gloves should be tested for leaks at least every six months. This is performed by trapping air in the rubber glove and checking for holes and cracks in the glove.



CABLE CUTTERS

The cable cutters have fiberglass handles and rubber hand grips so they don't conduct electricity. Electrical gloves should be worn and every attempt should be made to de-energize wires that need to be cut because of a life threatening emergency. **THEY ARE NOT TO BE USED FOR STEEL OR IRON CUTTING.**



BOLT CUTTERS

Bolt cutters are designed to cut 7/16th hard and 9/16th's soft metal bolts, care should be taken not to exceed what is recommended and causing damage to the jaws. When the gap between the blades in the closed position, prevent the cutter from working properly the bolt cutters should be removed from service. If a bar or bolt is larger than the recommended cutting diameter, it's best to use a K-12 or similar tool. **THEY ARE NOT DESIGNED TO CUT ELECTRICAL WIRES.**



FLAT HEAD AND PICK HEAD AXE

Both 6 lb. axes are carried on pumper and ladder apparatus. It is important to not over-sharpen an axe. If an edge is too sharp it will cause the blade to stick in the object it strikes. The pick head axe is used mostly as a forcible entry tool and for breaching floors and walls. The flat head axe is used as a striking tool.



TNT TOOL

This axe is a multi-purpose tool that is included in the high-rise kit. It has a cutting edge, a hammer, and a plaster hook. A dull edge is preferred on this tool also.



HAMMER HEAD PICK

A hammer-head pick is used for penetrating masonry walls and for breaking padlocks and is carried on ladder trucks.



BATTERING RAM

A tool carried on truck companies that are used by two men to breach doors or walls. The blunt end is used for doors and wood walls; the forked end is good for masonry walls and blocks. The battering ram weighs approximately 50lbs.



SLEDGE HAMMER

The 12 lb. sledge hammer is used primarily as a striking tool; it can also be very effective as a forcible entry tool.



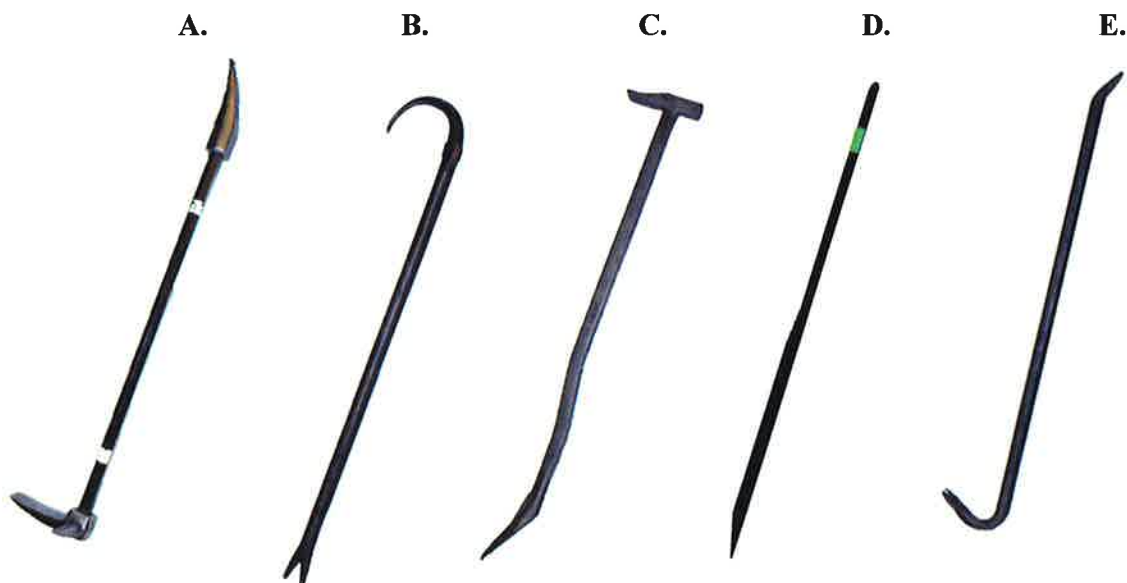
CLOSET HOOK

Rides in the cab of the apparatus mounted to a bracket. The closet hook is used for pulling and breaching ceilings to locate and extinguish fires.



UTILITY and PRY BARS

All utility or pry bars can be used primarily for the same purpose.



- A. Halligan – A multi-purpose bar with a hammer and chisel point on one end, and a large claw on the other end.
- B. Hook and Claw – A bar with a round, curved point on one end and a forked claw at the other end.
- C. Kelly tool – A heavy duty bar with a hammer and a chisel point at one end and a pry point on the opposite end.
- D. Crow bar - A long flat bar with a chisel end for prying.
- E. Pry bar – A bar with a hooked claw on one end and a chisel point on the other end.



POLE HOOK



Pole hooks are used to pull plaster, sheetrock, or tongue and groove ceilings. Small notches are carved on one side of the handle to identify the hook side. Truck Companies carry pole hooks in lengths of 6, 8, 10, and 12 feet; Pumper Companies generally carry one 6' and one 10' pole hook.

SHOVEL

Multiple shovels are used in the fire service; they are carried on both Pumpers and Truck Companies:

- A. Round shovel – used for digging dirt, grave, etc.
- B. Sharpshooter – used when debris or target area is packed too tight for a standard shovel or scoop.
- C. Scoop Shovel - Flat shovel used for getting up larger loose debris.
This type of shovel is the most effective and preferred type to use during overhaul.
- D. Pitch Fork – Although this tool is not a shovel, it aids in the removal of debris in the same manner





Haz Mat units carried specially constructed shovels and scoops to use when handling hazardous materials. Metal constructed scoops and shovels will not be used when handling hazardous material.

SAWS

A variety of handsaws ride on ladder trucks and pumpers: hacksaws, keyhole saws and carpenter saws.



Reciprocating Saw

The Reciprocating Saw is used to cut hard to reach areas. It rides with a metal cutting blade that can be quickly swapped for a wood cutting blade. The batteries are to be charged after each use and every Saturday during truck equipment inspection.



CHAINSAW

The chainsaw is used to cut through floors and other light weight building materials to support firefighters in accessing hidden fires and assist overhauled operations. It operates on pre-mixed fuel. Like all combustion engines air intake is necessary for proper function, it will not operate in smoky conditions.



ROOF SAW/QUIKVENT (QV8000)

It is designed to cut through roofs and floors for ventilation purposes. This saw is lightweight (22 lbs) and versatile with an angled blade designed to grab and penetrate a roof. It works best if the roofing is removed first to keep from gumming the blade with tar. Make sure to use pre-mixed fuel. It is equipped with a safety handle to guard against kickback that disengages the blade.



BOTH THE HOMELITE CHAINSAW AND QUIKVENT USE SAE 30 OIL OR EQUIVALENT AS A BAR AND CHAIN LUBRICANT, THEY NEED TO BE CHECKED EVERY DAY AND AFTER PROLONGED USE. THE BLADES SHOULD BE SHARPENED OR REPLACED AS NEEDED BY AUTHORIZED FIRE DEPARTMENT MAINTENANCE PERSONNEL.



Demolition Saw

Carried on ladder trucks, it is a multi-purpose saw with interchangeable blades that will cut metal and masonry materials. It normally rides with a combination blade attached since this would make the saw more versatile. This blade allows for a quicker response on the fire ground. It's a valuable entry tool with the ability to cut through locks and burglar bars quickly.



ARC AIR TORCH

The Arc Air torch can be used for a multiple operations that require quick cutting such as burglar bars and door locks. Due to the ability of the torch to transfer heat, especially when a patient is involved or there is a fire hazard, caution and safety are vital.



The Arc Air torch operates on DC power and oxygen and cuts with a special magnesium welding rod that has to be replaced as you cut.



THERMAL IMAGING DEVICES

Two types of thermal imaging devices are carried on Truck companies and specialty units. Both have the ability to pick up thermal heat from a living body and concealed fire to greatly increase a firefighter's ability to locate a victim or a hidden fire within the walls, floors attics as well as any other void space.



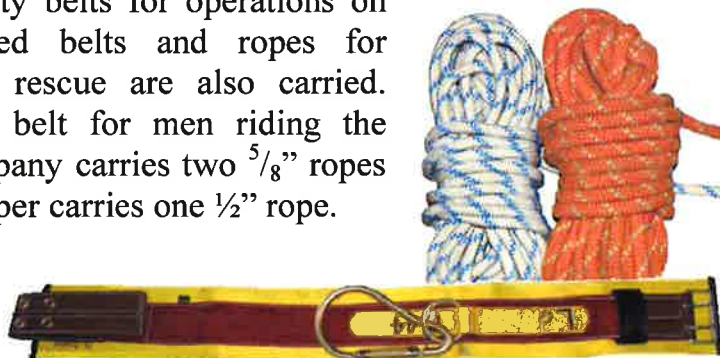
SCOTT EAGLE 160 IMAGER



BULLARD MX

LIFE BELTS and ROPES

Truck companies carry safety belts for operations on aerial ladders. Specialized belts and ropes for rappelling and high angle rescue are also carried. Pumpers utilize the safety belt for men riding the tailboard. Each Truck Company carries two $\frac{5}{8}$ " ropes and two $\frac{1}{2}$ " ropes; each Pumper carries one $\frac{1}{2}$ " rope.



COME ALONG

The come-along is standard equipment on all ladder trucks, it is used for but is not limited to assist in extrication and rescue.



WATER BACK PACKS

Pumpers are equipped with two 5 gallon portable back pack style water tanks. They are equipped with manual pumps built into the nozzle. These packs are used for extinguishing fires that are difficult to reach; usually during woods and grass fires.



PERSONAL LIGHTS



- A. Pelican light – Battery operated, waterproof, intrinsically safe light that rides on Scott paks and serves as a firefighters personal flashlight.
- B. Stream light – Mounted in a charger on each apparatus and emergency support vehicle.
- C. Traffic wand – Battery operated, to be used for backing vehicles and controlling traffic.



110volt HALOGEN SINGLE/DOUBLE LIGHTS

Truck companies have the ability to supply portable lights utilizing extension cords via a 110volt, truck mounted, diesel powered, generator.



110v DIESIL GENERATOR

HONDA GENERATOR

The portable AC/DC generator with a mounted light operates on pre-mixed fuel and is very useful in night-time salvage and overhaul. It also minimizes the need for long extension cords to set up lights. This Honda generator needs to be used outside structures to prevent carbon monoxide accumulation. It is best to not use the generator in areas where it could be subject to heavy smoke, heat and moisture.



HOSE EQUIPMENT

Although most hose equipment is assigned to Pumper Companies, several items have multiple purposes and will be carried on Truck Company apparatus as well.

Hose straps and rope hose tools are devices used to secure hose to ladders or other stationary objects. Hose straps are carried on Pumpers; Ladder companies carry rope hose tools.



ROPE HOSE TOOL



HOSE STRAP



Hose strap and rope hose tools are used as a means of securing hose to a ladder





The rope hose tool is constructed of 10' of Manila hemp rope spliced through an 8" hook. The rope hose tool can be draped over the shoulder, with the hook down for easy transfer and use up ladders. The hook should be positioned in the downward position. This prevents the hook from hanging up on rungs while climbing. The rope should be inspected weekly to ensure that it is not damaged or rotted.

HOSE ROLLER

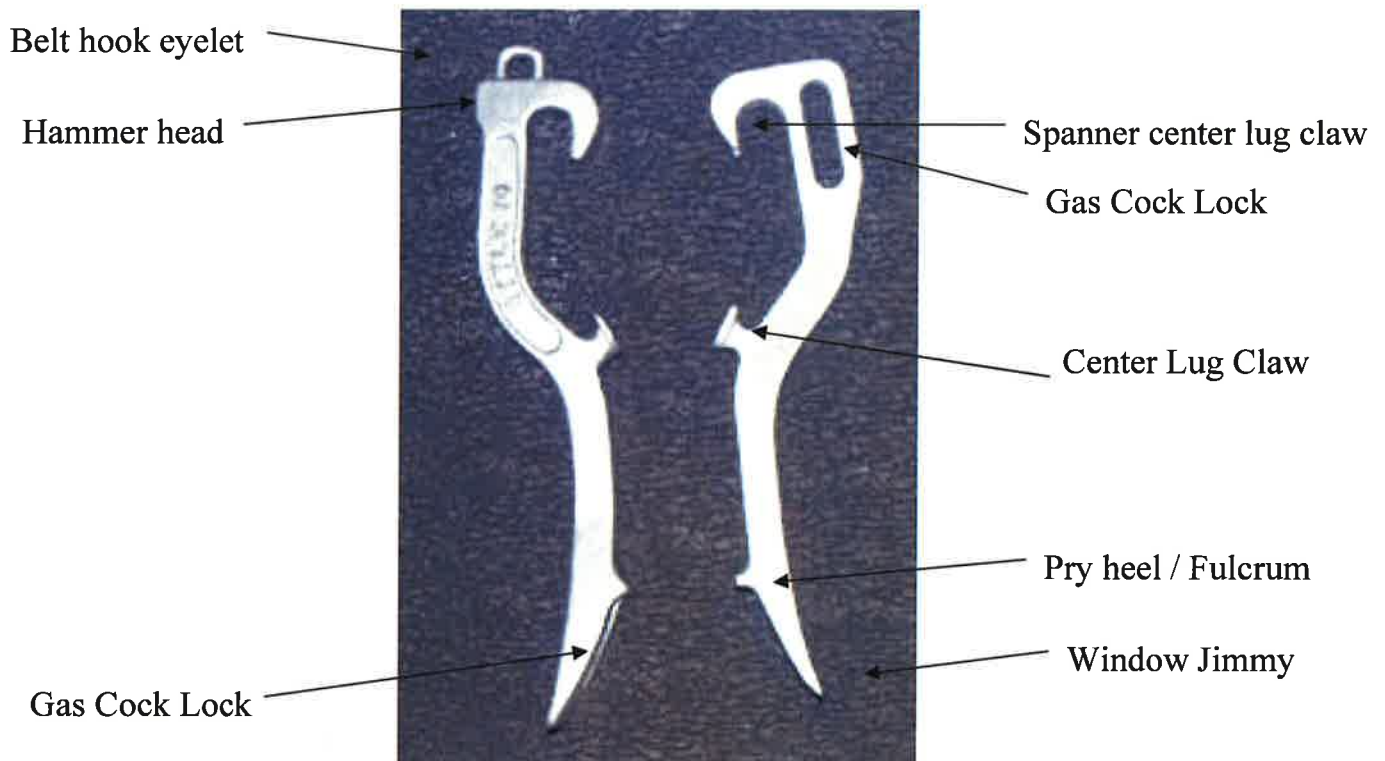
The hose roller keeps ropes and hose from becoming damaged on the edge of buildings and reduces friction on ladders and apparatus'. It designed with a 75 ft. and a 3 ft. ½" rope that are detachable by a quick link to fit the need. The hose roller is anchored by securing the rope to an anchor point using a bowline on a post knot.



SPANNER WRENCHES

Every Firefighter is issued a spanner wrench to be carried in their turnout gear. There are also several additional spanner wrenches attached to brackets on Pumper apparatus.

They have several uses, to pry, hammer, jimmy windows, to loosen and tighten couplings. Both styles are equipped with a gas cock slot. Because of their aluminum construction and tendency to break, it's best to use a crescent wrench or similar tool to turn off gas lines if available.



5" SPANNER WRENCH



Uncoupling 5 inch hose

The five inch spanner wrench rides on pumpers and is used to loosen and tighten 5 inch couplings. Due to the size and weight of 5" hose, extreme safety should be used when coupling and uncoupling hose.

HYDRANT WRENCHES



TAMPER GUARD

A multitude of hydrant wrenches are used in the Montgomery fire department. Some have non-adjustable ends that fit over the hexagon hydrant stems, the adjustable ends on the wrenches insure a better fit especially on older, more used hydrants with worn corners on the stem. In areas where it is common for illegal use of hydrants, they are equipped with tamper resistant stems and a special wrench is used.



HOSE SHUTOFF

Hose shutoffs are designed to stop the flow of water through a section of hose. The proper technique for applying a shutoff is important due to the physical injuries that could be caused by improper use.

- When applying any shutoff, do so by standing on the water supply side of the shutoff.
- Should be placed 20' behind apparatus and 6' behind the supply side of the coupling.
- Do not bend over the top of the shutoff handle while applying or removing the shutoff.
- Remove the shutoff slowly to prevent water hammer and loss of control.
- Be aware that the shutoff may not completely stop water flow.
- If possible replace shutoff on apparatus as soon as possible. Do not leave it lying on the ground.

MANUAL PRESS DOWN HOSE SHUTOFF

A manual press down shutoff that is used on 2 ½, 3 inch and 1 ¾ hose. to clamp off the water supply.



5 inch ZIAMATIC HOSE SHUTOFF

A large hydraulic shutoff designed to clamp off 5 inch hose. The hydraulic fluid reservoir should be examined for leaks and the fluid level checked on Saturday apparatus checks.

**** The 5 inch hose shut off should not be used on hose with pressure greater then 160 psi.**



SIAMESE

A Siamese is an appliance that takes two or more hose lines and converts them into one. Normally it is equipped with two or more females and one male coupling.



WYE

A wye is a device that takes one hose and diverts the water flow into two or more outlets, normally equipped with a female and 2 or more males. A true wye is one that has all inlets and outlets of the same diameter.



True wye (2 ½")



Gated wye (2 ½" to 1 ½")



PORTABLE HYDRANT

This wye is equipped with 4 males and a 5" intake. It rides exclusively on E-2. The top of this device is equipped with a relief valve designed to activate at approximately 125 PSI.

Relief Valve



GATE VALVES

The 5 inch and 2 ½ inch gate valves ride primarily on pumpers and are used mostly for catching hydrants. Safety should be used when opening and closing these devices to prevent water hammer.



5 INCH BUTTERFLY VALVE



2 ½ INCH GATE VALVE



DOUBLE MALES AND DOUBLE FEMALES

Appliances used to adapt same sized couplings whether on hose or appliances. Pumpers carry two sets of males and females. All Montgomery males and females are 2 ½ inch adaptors.



2 ½ INCH TO 1 ½ INCH REDUCER

This reducer is constructed with 2 ½ inch female threads and a 1 1/2 inch male thread. It is carried in the high rise kit and allows 1 ¾ lines to be hooked directly to the standpipe for high rise firefighting. It is also used to allow a 1 ¾ inch line to be attached to a 2 ½ inch line.



2 ½ INCH FOAM EDUCTOR

This eductor allows the Fire Department to flow foam through 2 ½ inch hose pulling the foam from 5 gallon buckets via a pick-up tube. It has a selector dial to control foam percentage. You should not exceed 1200 feet of hose on the discharge side when it's put in operation.



HOSE JACKET

This device is a clamp style jacket that can connect and seal two similar couplings, male to male, female to female, or different sized hose. It also can seal a damaged hose in an emergency. We should always consider a hose jacket as very temporary and the damaged hose should be shut down and replaced as soon as possible. When using this device do not exceed 150 psi on the hose lines running through the hose jacket.

